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THE EFFECT OF ADJUSTED BASAL MATERIALS UPON ACHIEVEMENT IN GRADES TWO AND THREE

Submitted by

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INTRODUCTION

Purpose of the study

The purpose of this study was:

1. To discover the range of individual reading abilities at second and third grade levels in one school system.
2. To ascertain the amount of adjustment being made to provide for different levels of achievement.
3. To determine the extent to which gains in reading achievement are affected by adjustment of basal materials.

CHAPTER II

REVIEW OF RELATED RESEARCH

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REVIEW OF RELATED RESEARCH

Since this study is an investigation concerning the effect of adjusted basal reading materials, the related research considers the problem of individual differences; its pertinence to the field of reading; experiments in providing differentiated instruction; the use of basal readers; the value of informal testing; and studies that have been done, relating to the difficulty of materials.

The major problem of the elementary school teacher is how to identify individual needs and how to provide for them. Caswell[1] states, in discussing this factor:

> In planning and developing the program of the elementary school, a realistic, sound view of the differences which exist among children and the role these differences should play in the educative process, is essential. Children should be studied to discover what their differences are,

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[1] Hollis L. Caswell, Education in the Elementary School (New York: American Book Company, 1942), p. 103.

> not with the idea that these differences should be eliminated, or the program adjusted to them, but rather with the view that they provide the basis upon which rich and varied personalities may be developed and out of which a co-operative society, with maximum complementary factors, may be built.

Considering the varied interests, achievements, and capacities, Barr, Burton, and Brueckner[1] say, "If the school's program is to be at all effective, pupils cannot be treated as if they were all alike."

In the field of reading, this is particularly true, affirms Durrell[2]: "Children in the same grade will differ greatly in their reading abilities, even though they have received a similar amount and type of reading instruction."

Durrell[3] goes on to say:

> The goal of reading instruction is to enable each child to advance in skill and interest as

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[1] A. S. Barr, William H. Burton, and Leo J. Brueckner, Supervision (New York: D. Appleton-Century Company, 1938), p. 211.

[2] Donald D. Durrell, Improvement of Basic Reading Abilities (Yonkers-on-Hudson, New York: World Book Company, 1940), p. 38.

[3] Ibid., p. 65.

> rapidly as his abilities permit. This goal can be attained, only, by taking into account individual differences in reading level, in interest, in learning rate, and in types of difficulties,...

Cole[1] believes that the range of speed, comprehension, and vocabulary is never less than four years in any grade, and that the variability is usually the most in the highest grade. She insists that "...there is no efficient way of teaching reading to a class as a whole."

"The wide range of reading abilities within a given grade precludes the possibility of using the same readers for the instruction of all pupils," says Betts[2].

Hildreth[3] attributes many reading disabilities to "undifferentiated and maladapted instruction in the primary years."

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[1] Luella Cole, The Improvement of Reading (New York: Farrar and Rinehart Inc., 1938), p. 20.

[2] Emmett Albert Betts, Foundations of Reading Instruction (New York: American Book Company, 1946), p. 551.

[3] Gertrude Hildreth, "Individualizing Reading Instruction," Teachers College Record, 42:123, November, 1940.

In a study of eighty-seven third grade pupils, Duffy[1] found that the range of reading achievement was from first to sixth grade, as measured by standardized tests.

Experiments in providing differentiated instruction

Progressive administrators and teachers have already demonstrated that the continuous growth plan with promotion by reading levels is successful. Superintendent De Long[2] reports favorably on the experiment of abolishing failure and promotion in the first two grades of Ellwood City, Pennsylvania.

Similar good results in Western Springs, Illinois, where the plan includes the first three grades, are reported by Wheat[3]. Not only is there

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[1] Gertrude B. Duffy, "A Diagnostic Study of Reading Difficulties in Third Grade," (unpublished Ed. M. thesis, Boston University School of Education, 1934. Published in part in Education, 56:37-40, September, 1935).

[2] Vaughn R. De Long, "Primary Promotion by Reading Levels," Elementary School Journal, 38:663-71, May, 1938.

[3] Leonard B. Wheat, "The Flexible Progress Group System," Elementary School Journal, 38:264-68, December, 1938.

an elimination of failure and repetition, but acceleration without skipping is made possible, when promotion is based on reading levels.

Kvaraceus and Wiles[1] wrote of an experiment in which the pupils in a second grade were grouped according to achievement and apparent abilities in three subjects.

Adjustments within the classroom are being made constantly to produce more effective learning. Dunklin[2] found a substantial reduction of failure in first grade reading, by means of adjusted instruction. He studied 120 first grade pupils, who were potential failures in November. The experimental group received individualized instruction with frequent use of informal diagnostic tests, whereas, the control children had the usual teaching, since they were known, only,

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[1] William C. Kvaraceus and Marion E. Wiles, "An Experiment in Grouping for Effective Learning," Elementary School Journal, 38:264-68, December, 1938.

[2] Howard T. Dunklin, "The Prevention of Failure in First Grade Reading by Means of Adjusted Instruction," (Contributions to Education no. 802, Teachers College, Columbia University, 1935).

to the examiner. The percentage of failure on school records of the experimental group was 16.6% as compared with 61.1% of the control groups; on standardized tests, 11.1% of the experimental group and 55.5% of the control groups failed to attain a grade score of 1.75 at the end of grade one.

Whitehead[1] concluded after his study of the range of ability:

> To describe a pupil as a fourth, fifth, or sixth grader simply means that he is a member of a group, whose average ability is on the fourth, or fifth, or sixth grade level. It is no indication of the ability of that child.

<u>The use of basal texts</u>

There has been a reaction against the regimented use of basal readers. Betts[2] says:

> Progress is paced and interest is stifled, when every pupil in a given grade is required to go through the same motions as every other pupil and must do with the same basal reader and the accompanying workbook.

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[1] John Andrews Whitehead, "An Analysis of the Ability of Intermediate Grade Pupils to Understand and Interpret Three Basic Textbooks," (unpublished Ed. M. thesis, Boston University School of Education, 1942).

[2] Emmett A. Betts, "Differentiated Instruction in Reading Activities," <u>American School Board Journal</u>, Vol. 100, No. 5, May and June, 1940, p. 29.

Dolch[1] reports that many school systems are adopting several sets of basic readers, using the easiest books for the slowest group. Another plan is to keep the regular basic book for the class reading of the slow group and to let the others read it for recreation.

When reading is learned through functional activities, the basic set of readers will disappear, says Smith[2], who asserts that:

> It may continue to wield its power for fifteen years or for fifty years, but in time it will march silently out of the classroom and be relegated to dusty attics, along with its progenitor, the hornbook.

Boney's[3] study confirmed this belief. He sent questionnaires to school administrators for their appraisals of basal reading programs. All but four of the twenty-five answers were in favor of making greater use of individualistic materials.

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[1] Edward W. Dolch, Teaching Primary Reading (Champaign, Illinois: The Garrard Press, 1941), p. 268.

[2] Nila Banton Smith, American Reading Instruction (New York: Silver, Burdett and Company, 1934), p. 267.

[3] C. DeWitt Boney, "Basal Readers," Elementary English Review, Vol. 15, No. 4, April, 1938, pp. 133-37.

Informal testing

Harris[1] asserts that materials must be selected "of the appropriate level of difficulty"; however, those suitable reading materials can be utilized only if the appropriate instructional level of the pupil, at any given time, can be determined.

McCallister[2] suggests that informal tests of reading ability frequently secure more normal reactions from the pupil than do standard tests, and, therefore, are indispensable.

A combination of both formal and informal testing is necessary for a complete picture, believes Betts[3], who says:

> The analysis of reading problems may begin with the administration of a standardized test of reading achievement, but it is not completed until a study is made of the child, as he reacts to the instructional materials in the classroom.

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[1] Albert J. Harris, How to Increase Reading Ability (New York: Longmans, Green and Company, 1940), p. 170.

[2] James M. McCallister, Remedial and Corrective Instruction in Reading (New York: D. Appleton-Century Company, 1936), pp. 73-74.

[3] Emmett A. Betts, "Corrective and Remedial Cases," Visual Digest, Vol. II, No. 4, Spring, 1947. p. 44.

Durrell[1] stresses the value of informal tests to "...obtain relatively precise knowledge of the instructional needs..." of pupils within a classroom.

Gates[2] advocates the frequent use of informal appraisals as a necessary part of regular classroom procedure.

High correlations were found between ratings given by teachers, as a result of informal tests, and composite standard test scores in a study reported by Daniels[3].

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[1] Durrell, *op. cit.* p. 18.

[2] Arthur I. Gates, "General Recommendations Concerning Programs for Evaluating Achievement in Reading," *Thirty-Sixth Yearbook of the National Society for the Study of Education*, Part I (Bloomington, Illinois: Public School Publishing Company, 1937), pp. 359-88.

[3] Katharine H. Daniels, "An Evaluation of Certain Informal Tests," (unpublished Ed. M. thesis, Boston University School of Education, 1940).

An informal reading inventory was employed by Killgallon[1] in his study of fourth-grade pupil adjustments, in language situations.

He found that the standardized test placed pupils about one grade above their placement estimated from the reading inventory.

Wheelock[2] found that the results of the informal tests showed lower achievement than did the standard tests.

The value of informal testing cannot be ignored in a program that attempts to discover differences and to provide for them adequately.

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[1] P. A. Killgallon, "A Study of Relationships among Certain Pupil Adjustments in Reading Situations," (unpublished Doctor's dissertation, Pennsylvania State College, State College, Pennsylvania, 1942).

[2] Elsie K. Wheelock, "A Survey of Specific Reading Skills in a Single Elementary School as a Basis for Building a More Effective Reading Program," (unpublished Ed. M. thesis, Boston University School of Education, 1942).

Determining difficulty of material

Betts'[1] criteria for evaluating the suitability of instructional material include seventy-five percent comprehension, ninety-five percent accurate pronunciation, ability to anticipate meaning, and absence of strain or fatigue.

McClatchy's[2] goal for pupils at the end of grade three is that they:

> ...be able to read aloud with sufficient fluency to cover a selection using common words and expressing straight-forward information at about 100 words a minute with no more than one error.

Gould[3] reported, after a survey of the suitability of instructional materials in grades two and three, that the percentage of pupils reading at grade level was high; that only a few reading materials were

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[1] Emmett Albert Betts, Foundations of Reading Instruction (New York: American Book Company, 1946), pp. 448-49.

[2] Josephine H. McClatchy, "The Administrator's Responsibility," Educational Research Bulletin, 20:151, September, 1941.

[3] Charlotte E. Gould, "A Survey of Oral Reading Errors and Suitability of Instructional Materials in Grades Two and Three," (unpublished Ed. M. thesis, Boston University School of Education, 1942).

too easy, as to speed; but that many of the pupils were reading material too difficult, compared to their rate of speed.

Beal[1] devised a technique for determining the difficulty of primary grade reading. She arranged twenty selections in a tentative order of difficulty and then recorded the difficulties encountered by sixty children in second and third grades. The records of those various difficulties were combined into a single rating of difficulty for each selection.

Killgallon[2] found a ratio of one to twenty between the word perception errors and the number of running words on the instructional level.

Limitations of previous studies

Milazzo[3] made a study of 104 children in grades

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[1] Alice Burton Beal, "An Evaluation of Techniques for Determining the Difficulty of Primary Grade Reading," (unpublished Ed. M. thesis, Boston University School of Education, 1937).

[2] Killgallon, op. cit., p. 179.

[3] Marjorie T. Milazzo, "The Effect of Adjusted Basal Materials on Achievement in Grades Two and Three," (unpublished Ed. M. thesis, Boston University, School of Education, 1946).

two and three, using the same general procedure as in the present investigation. Her major findings were (1) 44 per cent of the children were reading at their achievement level, 55 per cent were reading below their achievement level, and only 1 per cent was reading above achievement level; (2) the results of the informal test were lower than those on the Durrell Paragraphs; (3) no significant difference in the mean gain in rate, or in the mean gain in reduction of errors; but (4) a significant difference in mean gain in paragraphs in favor of those reading below achievement level.

The present experiment deals with a larger number of pupils from all second and third grades in one school system. This increases the chance of finding more pupils, who are reading above achievement level.

An attempt will be made to determine how much adjustment of basic materials is being provided, and what effect such adjustment may have on reading gains.

CHAPTER III

PLAN AND PROCEDURE

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Restatement of problem

The purpose of this study was (1) to discover the range of individual reading abilities at second and third grade levels in one school system; (2) to ascertain the amount of adjustment being made to provide for different levels of achievement; (3) to determine the extent to which gains in reading achievement are affected by adjustment of basal materials.

Description of population

This study included 306 children in grades two and three from the four elementary schools in a residential town not far from Boston. Ten teachers, four second grades, four third grades, and two mixed second and third grades are represented. Table I shows the distribution.

TABLE I

THE TOTAL NUMBER OF PUPILS AND GRADES TESTED

School	Grade II			Grade III			Grades II and III		
	B	G	Total	B	G	Total	B	G	Totals
I	17	21	38	25	17	42	42	38	80
II	29	21	50	31	18	49	60	39	99
III	11	19	30	17	17	34	28	36	64
IV	17	14	31	14	18	32	31	32	63
Totals	74	75	149	87	70	157	161	145	306

Chronological and mental ages were obtained from the files. The results for the second grade children were from The Pintner-Cunningham General Ability Test[1] taken while they were in Kindergarten. Third-grade test results are from the Kuhlmann-Anderson Tests[2], which were taken while the children were in the second grade. Table II shows the chronological and mental ages of the group.

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[1] Published by World Book Company, Yonkers-on-Hudson, New York, 1938.

[2] Published by Educational Test Bureau, Philadelphia, 1942.

TABLE II

MEAN CHRONOLOGICAL AND MENTAL AGES IN MONTHS

Grade	No.	Mean C.A.	S.D.	Mean M.A.	S.D.
II	149	87.47	5.85	95.18	10.62
III	157	104.17	7.26	111.33	5.79

The chronological ages in grade two ranged from 6.5 to 9.5 with a mean of 7.3, while the mental ages ranged from 5.8 to 11.3 with a mean of 7.11. This indicated that the group is above average in mental capacity.

The chronological ages in grade three ranged from 7.8 to 10.11 with a mean of 8.8, while the mental ages ranged from 7.5 to 10.8 with a mean of 9.3. This group is also above average.

The testing program

Four tests were administered to each child by the writer: an informal test from the child's classroom reader; paragraphs from Durrell Analysis of

Reading Difficulty[1]; and two forms of Stanford Achievement Test[2].

<u>The informal test</u>

Books in use in the ten classrooms were arbitrarily rated into three levels of difficulty, according to the number of pages in each book. The first third of a book was rated Low, the middle third was rated Middle, and the last third was rated High. The scale was as follows:

High Third	3.8
Middle Third	3.5
Low Third	3.2
High Second	2.8
Middle Second	2.5
Low Second	2.2
High First	1.8
Middle First	1.5
Low First	1.2
High Primer	P.8
Middle Primer	P.5
Low Primer	P.2

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[1] Published by World Book Company, Yonkers-on-Hudson, New York, 1933.

[2] Published by World Book Company, Yonkers-on-Hudson, New York, 1941.

A 100-word selection of material that had been taken recently in class was chosen from each of the eleven books being used at the time. A record was made of the time, the number of errors and comprehensions. Errors included miscalling, omissions, additions, repetitions and ignoring periods. After a hesitation of five seconds, the word was told to the child.

The Durrell Paragraphs

The paragraphs designed for determining oral reading ability from the Durrell Analysis of Reading Difficulty were used for the second test. Norms are included, which provide a basis for comparison with the results of the informal test.

The Stanford Achievement Test

All children in grades two and three were to have a form of this test at the end of the year, so it was decided to use Form E in January and Form F in May, 1946. The composite grade-equivalent scores were compared to measure gain during the four-month period. The lower limits of this test did not cover the poorest readers in the second grade in January, nor did the upper limits cover the best readers in the third grade in May.

The testing procedure

The informal test and the Durrell Paragraphs were given during the month of January. The books in use at the time are listed in the Appendix.

First, each child read to the examiner the 100-word selection from his own textbook. The passage was always chosen from a section only recently taken in class, so the comprehension results are not significant. No attempt was made to classify the kinds of errors.

Immediately following the informal test, the Durrell Paragraphs were read in order to determine each child's level of ability. The amount of adjustment of classroom material to ability was found by comparing the results of the two tests.

Directions accompany the Durrell tests and they were followed. The general procedure was to begin with the paragraph that seemed most suitable, judging from the child's performance on the informal test. If two or more errors were made on the initial paragraph, the preceding one was read and so down the list, until a paragraph was read without errors. The child then continued to read increasingly difficult paragraphs, until seven or more errors were made on

a particular one.

Reading levels were obtained by the use of the medians, as directed in the Durrell manual. The scores High Third, Middle Third, etc., were changed to 3.8, 3.5, etc., to match the scale used on the informal test.

The Stanford Achievement Tests were administered exactly as the directions indicated. In most cases, the room teacher was present during the testing, but all tests were given and scored by the writer.

Data from the four reading tests were analyzed and are presented in the next chapter.

CHAPTER IV

ANALYSIS OF DATA

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The purpose of this study was (1) to discover the range of individual reading abilities at second and third grade levels in one school system; (2) to ascertain the amount of adjustment being made to provide for different levels of achievement; (3) to determine the extent to which gains in reading achievement are affected by adjustment of basal materials.

Range of Ability

The range of reading ability in grade two and in grade three was determined by use of the oral reading section of the Durrell Paragraphs. A spread of approximately four grades was found within each of the two grades. In the second grade, the range of ability was from Middle Primer to High Fourth. The third grade showed a range from High First to Middle Fifth.

The basal reading books in use in the classrooms, at that time, showed a much narrower range. In the second grade, the difficulty of the material ranged from Middle Primer to High Second. The third grade

material ranged from Middle Second to High Third.

Degree of adjustment

The relative difficulty of material for each child was found by a comparison between his level of reading ability and the level of the material in use in the classroom. Table III shows the number of children for the various degrees of adjustment. The Adjusted Group includes those children whose ability and classroom material agree within five months (-2 to + 2).

TABLE III

DEGREE OF ADJUSTMENT IN RELATION TO ABILITY

Relative difficulty of material	Grade II	Grade III	Total
8 months or more too hard	4	10	14
3 to 7 months too hard	22	35	57
Adjusted	27	28	55
3 to 7 months too easy	53	37	90
8 to 12 months too easy	24	23	47
13 to 17 months too easy	16	20	36
18 or more months too easy	3	4	7
	149	157	306

The effect of adjustment on achievement

The relationship between the degree of adjustment of basal materials and the amount of gain was found by the computation of the Standard Error of the mean, the Standard Error of the difference and the Critical Ratios for each mean.

Mills[1] makes the following statement:

> If a given difference between hypothetical and observed values would occur as a result of chance, only one time out of one hundred, or less frequently, we may say that the difference is significant. This means that the results are not consistent with the hypothesis we have set up. If the discrepancy between theory and observation might occur more frequently than one time out of one hundred, solely because of the play of chance, we may say the difference is not clearly significant. The results are not inconsistent with the hypothesis. The value of T (the difference between the hypothetical value and the observed mean, in units of the standard error of the mean), corresponding to a probability of 1/100 is 2.576. One hundredth part of the area under a normal curve lies at a distance from the mean, on the axis, of 2.576 standard deviations or more. Accordingly, tests of significance may be applied with direct reference to T, interpreted as a normal deviate (i.e., as a deviation from the mean of a normal distribution expressed in units of standard deviation). A value of T of 2.576 or more indicates a significant difference, while a

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[1] Frederick C. Mills, Statistical Methods (Revised), (New York: Henry Holt and Company, 1938), p. 471.

> value of less than 2.576 indicates that the results are not inconsistent with the hypothesis in question.

In the light of the above information, any mean with a Critical Ratio of 2.576 or better was interpreted as statistically significant.

Table IV shows a mean gain of 5.45 months for the Adjusted group and a mean gain of 3.71 for the group reading material that was eight months or more too hard. A difference of 1.74 shows a positive relationship in favor of the Adjusted group.

TABLE IV

MEAN GAIN IN RELATION TO HARD AND ADJUSTED MATERIAL

Difficulty of Selection	No.	Mean Gain	S.D.	S.E. M.	Diff.	S.E. Diff.	C.R.
8 months or more too hard	14	3.71	2.28	.603	1.74	.75	2.32
Adjusted	55	5.45	3.31	.446			

The Critical Ratio of 2.32 indicates that the results are not statistically significant, which fact may be due to the small number of cases.

Table V shows a mean gain of 3.51 for the group reading material that was three to seven months too hard. A difference of 1.94 shows a positive relationship in favor of the Adjusted group.

TABLE V

MEAN GAIN IN RELATION TO HARD AND ADJUSTED MATERIAL

Difficulty of Selection	No.	Mean Gain	S.D.	S.E. M.	Diff.	S.E. Diff.	C.R.
3 to 7 months too hard	57	3.51	2.56	.339	1.94	.56	3.50
Adjusted	55	5.45	3.31	.446			

The Critical Ratio of 3.50 indicates a statistical significance.

Table VI shows a mean gain of 5.08 for the group reading material that was three to seven months too easy. A difference of .37 is in favor of the Adjusted group.

TABLE VI

MEAN GAIN IN RELATION TO EASY AND ADJUSTED MATERIAL

Difficulty of Selection	No.	Mean Gain	S.D.	S.E. M.	Diff.	S.E. Diff.	C.R.
Adjusted	55	5.45	3.31	.446	.37	.57	.644
3 to 7 months too easy	90	5.08	3.43	.361			

The Critical Ratio of .644 shows no statistical significance to these results.

Table VII shows a mean gain of 4.15 for the group reading material that was eight to twelve months too easy. A difference of 1.30 shows a positive relationship in favor of the Adjusted group.

TABLE VII

MEAN GAIN IN RELATION TO EASY AND ADJUSTED MATERIAL

Difficulty of Selection	No.	Mean Gain	S.D.	S.E. M.	Diff.	S.E. Diff.	C.R.
Adjusted	55	5.45	3.31	.446	1.30	.76	1.71
8 to 12 months too easy	47	4.15	4.17	.608			

The Critical Ratio of 1.71 indicates no statistical significance.

Table VIII shows a mean gain of 2.75 for the group reading material that was thirteen to seventeen months too easy. A difference of 2.70 shows a positive relationship in favor of the Adjusted group.

TABLE VIII

MEAN GAIN IN RELATION TO EASY AND ADJUSTED MATERIAL

Difficulty of Selection	No.	Mean Gain	S.D.	S.E. M.	Diff.	S.E. Diff.	C.R.
Adjusted	55	5.45	3.31	.446	2.70	.70	3.857
13 to 17 months too easy	36	2.75	3.25	.54			

The Critical Ratio of 3.857 shows that these results are statistically significant.

Table IX shows a mean gain of 2.14 for the group reading material that was eighteen months or more too easy. A difference of 3.31 shows a positive relationship in favor of the Adjusted group.

TABLE IX

MEAN GAIN IN RELATION TO EASY AND ADJUSTED MATERIAL

Difficulty of Selection	No.	Mean Gain	S.D.	S.E. M.	Diff.	S.E. Diff.	C.R.
Adjusted	55	5.45	3.31	.446	3.31	1.18	2.884
18 months or more too easy	7	2.14	2.90	1.095			

The Critical Ratio of 2.884 attaches a statistical significance to these results, even though a small number of cases is represented.

Table X summarizes the results of the foregoing tables. The highest mean gain was for the Adjusted group, being 5.45 months. All comparisons show positive relationships in favor of this group.

TABLE X: MASTER TABLE:

MEAN GAIN IN RELATION TO HARD, EASY AND ADJUSTED MATERIAL

Relative difficulty of selections	No.	Mean Gain	S.D.	S.E. M.	Diff. from Adj.	S.E. Diff.	C.R.
8 months or more too hard	14	3.71	2.28	.603	1.74	.75	2.32
3 to 7 months too hard	57	3.51	2.56	.339	1.94	.56	3.50
Adjusted	55	5.45	3.31	.446			
3 to 7 months too easy	90	5.08	3.43	.361	.37	.57	.644
8 to 12 months too easy	47	4.15	4.17	.608	1.30	.76	1.71
13 to 17 months too easy	36	2.75	3.25	.54	2.70	.70	3.857
18 months or more too easy	7	2.14	2.90	1.095	3.31	1.18	2.884

N = 306

An examination of Table X reveals that the Critical Ratios for the following groups indicate statistical significance: the group reading material three to seven months too hard; the group reading material thirteen to seventeen months too easy; and the group reading material eighteen months or more too easy.

CHAPTER V

SUMMARY AND CONCLUSIONS

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this investigation was to determine the effect of adjusted basal materials, upon reading achievement in grades two and three.

In general, it was found that children who are reading material adjusted to their ability, or from three to seven months below their level, make the greatest gain in reading achievement.

Specific conclusions were the following:

1. When the basal material was eight months or more too hard, the mean gains were in favor of the Adjusted group to the extent of 1.74 months. The Critical Ratio of this difference was 2.32, which is not statistically significant, probably due to the small number of cases in the experimental group.
2. When the basal material was three to seven months too hard, the difference between the mean gains was 1.94, in favor of the Adjusted group. The Critical Ratio of 3.50 is statistically significant.

3. When the basal material was three to seven months too easy, the difference was only .37 in favor of the Adjusted group, with a Critical Ratio of .64 which is not significant.
4. When the basal material was eight to twelve months too easy, the difference was 1.30 in favor of the Adjusted group. The Critical Ratio of 1.70 is not statistically significant.
5. When the basal material was thirteen to seventeen months too easy, the difference was 2.70 in favor of the Adjusted group. The Critical Ratio of 3.85 is statistically significant.
6. When the basal material was eighteen months or more too hard, the difference was 3.31 in favor of the Adjusted group. The Critical Ratio of 2.88 is statistically significant.

CHAPTER VI

SUGGESTIONS FOR FURTHER RESEARCH

CHAPTER VI

SUGGESTIONS FOR FURTHER RESEARCH

1. A similar study should be made with children from higher grade levels. A wider range of ability and of adjustment might produce even more significant results.
2. A means of determining suitability of material should be obtained. The suitability of materials other than the basal texts could be rated and a comparison made of gains.
3. An attempt to determine the relationships that exist between adjustment of material and gains according to intelligence.
4. An investigation covering a longer period of time, with more than one check on the suitability of material at various intervals.

BIBLIOGRAPHY

BIBLIOGRAPHY

Barr, A. S., William H. Burton, and Leo J. Brueckner, Supervision. New York: D. Appleton-Century Company, 1938.

Beal, Alice Burton, "An Evaluation of Techniques for Determining the Difficulty of Primary Grade Reading." Unpublished Ed. M. thesis, Boston University School of Education, 1937.

Betts, Emmett A., "Corrective and Remedial Cases," Visual Digest, Vol. II, No. 4, Spring, 1947. Pp. 36-44.

_______, "Differentiated Instruction in Reading Activities," American School Board Journal, Vol. 100, No. 5, May and June, 1940. Pp. 29-30, 108, 27-29.

_______, Foundations of Reading Instruction. New York: American Book Company, 1946.

Boney, C. DeWitt, "Basal Readers," Elementary English Review, Vol. 15, No. 4, April, 1938. Pp. 133-37.

Caswell, Hollis L., Education in the Elementary School. New York: American Book Company, 1942.

Cole, Luella, The Improvement of Reading. New York: Farrar and Rinehart, Inc., 1938.

Daniels, Katharine H., "An Evaluation of Certain Informal Tests." Unpublished Ed. M. thesis, Boston University School of Education, 1940.

De Long, Vaughn R., "Primary Promotion by Reading Levels," Elementary School Journal, 38:663-71, May, 1938.

Dolch, Edward W., Teaching Primary Reading. Champaign, Illinois: The Garrard Press, 1941.

Duffy, Gertrude B., "A Diagnostic Study of Reading Difficulties in Third Grade." Unpublished Ed. M. thesis, Boston University School of Education, 1934. Published in part in Education, 56:37-40, September, 1935.

Dunklin, Howard T., "The Prevention of Failure in First Grade Reading by Means of Adjusted Instruction," Contributions to Education no. 802. Teachers College, Columbia University, 1935.

Durrell, Donald D., Improvement of Basic Reading Abilities. Yonkers-on-Hudson, New York: World Book Company, 1940.

Gates, Arthur I., "General Recommendations Concerning Programs for Evaluating Achievement in Reading," (The Teaching of Reading: A Second Report), Thirty-Sixth Yearbook of the National Society for the Study of Education, Part I. Bloomington, Illinois: Public School Publishing Company, 1937. Pp. 359-88.

Gould, Charlotte E., "A Survey of Oral Reading Errors and Suitability of Instructional Materials in Grades Two and Three." Unpublished Ed. M. thesis, Boston University School of Education, 1942.

Harris, Albert J., How to Increase Reading Ability. New York: Longmans, Green and Company, 1940.

Hildreth, Gertrude, "Individualizing Reading Instruction," Teachers College Record, 42:123-37, November, 1940.

Killgallon, P. A., "A Study of Relationships among Certain Pupil Adjustments in Reading Situations." Unpublished Doctor's dissertation, Pennsylvania State College, 1942.

Kvaraceus, William C., and Marion E. Wiles, "An Experiment in Grouping for Effective Learning," Elementary School Journal, 38:264-68, December, 1938.

MacLatchy, Josephine H., "The Administrator's Responsibility," Educational Research Bulletin, 20:147-52, September, 1941.

McCallister, James M., Remedial and Constructive Instruction in Reading. New York: D. Appleton-Century Company, 1936.

Milazzo, Marjorie T., "The Effect of Adjusted Basal Materials on Achievement in Grades Two and Three." Unpublished Ed. M. thesis, Boston University, School of Education, 1946.

Mills, Frederick C., Statistical Methods (Revised). New York: Henry Holt and Company, 1938.

Smith, Nila Banton, American Reading Instruction. New York: Silver, Burdett and Company.

Wheat, Leonard B., "The Flexible Progress Group System," Elementary School Journal, 38:175-83, November, 1937.

Wheelock, Elsie K., "A Survey of Specific Reading Skills in a Single Elementary School as a Basis for Building a More Effective Reading Program." Unpublished Ed. M. thesis, Boston University School of Education, 1942.

Whitehead, John Andrews, "An Analysis of the Ability of Intermediate Grade Pupils to Understand and Interpret Three Basic Textbooks." Unpublished Ed. M. thesis, Boston University School of Education, 1942.

APPENDIX

BOOKS USED IN INFORMAL TEST

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BOOKS USED IN INFORMAL TEST

1. Friends and Neighbors - second reader I
2. More Friends and Neighbors - second reader II
3. Streets and Roads - third reader I
4. More Streets and Roads - third reader II

   A Revision of the Elson-Gray Basic Readers. New York: Scott-Foresman, 1941.

5. Rain and Shine - Primer II

   Reading for Interest Series. Boston: D. C. Heath, Company, 1942.

6. The Ranch Book - primer

   Core - Vocabulary Readers. New York: Macmillan Company, 1943.

7. In City and Country - first reader

   Unit - Activity Reading Series. New York: Silver-Burdett Company, 1940.

8. Stories We Like - second reader

   The Laidlaw Basic Readers. New York: Laidlaw Bros., Inc., 1940.

9. _Tip_ - supplementary first reader
10. _We Grow Up_ - second reader
11. _Wide Wings_ - third reader

The New Work - Play Books. New York: Macmillan Company, 1939.